Session of these variables is controlled by

Session 3 Paper: Tissues By Laura Hyre Colorado Christian University There are four types of tissues in the body. These tissues are the epithelial tissue, the connective tissue, the muscle tissue, and the nervous tissue.

From our textbook reading, Anatomy and physiology: 9th Ed by Patton and Thibodeau, I will describe the structures, functions and where I can be found in the human body. The epithelial tissue covers and protects the body surface and lines the body cavities. It transports substances by absorption, secretion, and excretion. It is glandular in activity. The structure of the epithelial tissue is of one or more layers of densely arranged cells with very little extracellular matrix. It may form either sheets or glands. An example of the epithelial tissue in the body is the outer layer of the skin. The connective tissue supports the body structures and transports substances throughout the body.

The structure of the connective tissue are sparsely arranged cells surrounded by a large proportion of extracellular matrix containing fibers. Under the microscope, it looks intertwined fibers and cells mixed together. It can be found in the bones or joint cartilage. The muscle tissue produces body movements and movement of organs such as the stomach and heart. It produces heat. Muscle tissue are long fiber like cells, which are sometimes branched. They can be found in the heart muscle, muscles of the head, arms, legs, and trunk.

Finally, the nervous tissue. The nervous tissue is the communication between body parts. It integrates and regulates body functions. The structure of the nervous tissue is that it looks like a mixture of many cell

types, which include several types of neurons and neuroglia. This tissue can be found in the spinal cord, brain, and nerves of the body. According to Wikipedia, “ Homeostasis can be defined as the stable condition of an organism and of its internal environment; or as the maintenance or regulation of the stable condition, or its equilibrium; or simply as the balance of bodily functions.

The stable condition is the condition of optimal functioning for the organism, and is dependent on many variables, such as body temperature and fluid balance, being kept within certain pre-set limits. Other variables include the pH of extracellular fluid, the concentrations of sodium, potassium and calcium ions, as well as that of the blood sugar level, and these need to be regulated despite changes in the environment, diet, or level of activity. Each of these variables is controlled by one or more regulators or homeostatic mechanisms, which together maintain life”(Wikipedia, 2018).

One tissue type that I would like to discuss is the epithelial tissue. I have worked in the surgical side of dermatology and the general side of dermatology. In both areas, I have seen and help assist in treating all the kinds of skin cancers, including Melanoma. For discussion purposes, I will select Squamous cell carcinoma, as a type of cancer that can be produced in the epithelial tissue.

“ A squamous cell carcinoma is a malignant tumor of the squamous epithelial cells (Science learning hub, 2018). Squamous cell carcinoma affects the epithelial tissue because the squamous cells make up most of the cells in the outer layer of the skin (the epidermis), the passages of the respiratory and

digestive tracts. Homeostasis and squamous cell carcinoma facts. According to an article by Guasch and Schober, they stated that “ although TGF? is a potent inhibitor of proliferation, epithelia lacking the essential receptor (T? RII) for TGF? signaling display normal tissue homeostasis. By studying asymptomatic T? RII-deficient stratified epithelia, we show that tissue homeostasis is maintained by balancing hyper proliferation with elevated apoptosis. Moreover, rectal and genital epithelia, which are naturally proliferative, develop spontaneous squamous cell carcinomas with age when T? RII is absent.

This progression is associated with a reduction in apoptosis and can be accelerated in phenotypically normal epidermis by oncogenic mutations in Ras. We show that T? RII deficiency leads to enhanced keratinocyte motility and integrin-FAK-Src signaling. Together, these mechanisms provide a molecular framework to account for many of the characteristics of T? RII-deficient invasive SQCCs.

The development of cancers depends on the ability of tumor cells to enhance growth-promoting programs and restrict growth-inhibiting mechanisms and apoptotic cell death. This endows tumors with the advantage to overcome growth limitations, which they accomplish by acquiring multiple mutations in oncogenes and tumor suppressor genes” (Guasch and Schober, 2007). The damage of burns that cause severity to the skin comes in different degrees. There is first-degree burns which is a simple sunburn and the skin is red in color, it may have some discomfort.

There Second-degree burns which involve the deep epidermal layers and can cause injury to the upper layers of the dermis. A person with this degree of burns can recognize blisters, generalized swelling, burning sensation, and scarring is common. Then, there is Third-degree burns, which characterized as destruction to the epidermis and dermis.

It may be called a Fourth-degree burn as well, depending on the severity. The pain is severe and the scarring is a serious problem. The homeostasis is that humans maintain a constant body temperature. When the body is exposed to intense heat, it effects the epithelial tissue cells causing scarring or affecting hair follicles of the skin due to severe burns. References Patton & Thibodeau, (2016). Anatomy and physiology: 9th Ed. St. Louis, MO: Mosby.

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